AVIAN INFLUENZA

Agent Information:

The "avian influenza virus" refers to influenza A viruses found chiefly in birds, but infections with certain strains can occur in humans. Many different subtypes of type A influenza viruses exist. These subtypes are identified by specific proteins on the surface of the influenza A virus (hemagglutinin [HA] and neuraminidase [NA] proteins). There are sixteen known HA subtypes and nine known NA subtypes of influenza A viruses, with many different combinations of HA and NA proteins possible. Each combination represents a different subtype of the virus. Human illness has been documented from types H5, H7, and H9.

Signs and Symptoms:

The reported symptoms for avian influenza in humans have ranged from typical influenza-like symptoms (fever, cough, sore throat, and muscle aches) to eye infections (conjunctivitis), pneumonia, acute respiratory distress, viral pneumonia, and other severe life-threatening complications. The fatality rate from H5N1 human illness in Asia is associated with a fatality rate above 50 percent.

Transmission:

Direct contact with infected poultry or contaminated surfaces. Avian strains which infect humans may acquire the ability to be spread from person to person. Person-to-person transmission of H5N1 in Asia is suspected on rare occasions but not proven. Person-to-person transmission occurs by droplet, aerosol and fomite transmission.

Protective Measures:

Standard Precautions: Hand hygiene before and after all contact with patients or with items potentially contaminated with respiratory secretions.
Contact Precautions: Use gloves, gown, eye protection, and dedicated equipment (e.g. stethoscopes, disposable blood pressure cuffs, disposable thermometers) for all patient contact.
Airborne Precautions: Place the patient in an airborne isolation room. It should have monitored negative air pressure in relation to corridor, with 6 to 12 air changes per hour (ACH), and exhaust air directly outside or have recirculated air filtered by a high efficiency particulate air (HEPA) filter. Portable HEPA filters may be used instead to increase the number of ACH. Use a fit-tested respirator, preferably a NIOSH-approved N-95 filtering respirator, when entering the room.

Lab Samples for Evaluation:

Call the Delaware Public Health Laboratory (302-223-1520) for information about laboratory testing and to coordinate the submission of specimens for analysis. For viral cultures, acceptable specimens include nasal washes, nasopharyngeal (NP) aspirates, NP and throat swabs, tracheal aspirates, and bronchoalveolar lavage.

Prophylaxis:

Four different influenza antiviral drugs (amantadine, rimantadine, oseltamivir, and zanamivir) are approved by the U.S. Food and Drug Administration (FDA) for the treatment of influenza; three are approved for prophylaxis. The Centers for Disease Control and Prevention (CDC) recommends that neither amantadine nor rimantadine be used for treatment or prevention of influenza A viruses. All four have activity against influenza A viruses. However, sometimes influenza strains can become resistant to these drugs, and therefore the drugs may not be effective.

Treatment:

There is no vaccine currently available. The H5N1 virus that has caused human illness and death in Asia is resistant to amantadine and rimantadine, two antiviral medications commonly used for influenza. Two other antiviral medications, oseltamavir and zanamavir would probably work to treat influenza caused by H5N1, but additional studies still need to be done to demonstrate their effectiveness.

Reporting:

Any suspect cases should be reported immediately to the Division of Public Health, Epidemiology Branch: 1-888-295-5156 (24/7 coverage). For additional information view the CDC website: http://www.cdc.gov/flu/avian/.